Saving Energy Battle (sEB)

Ana Pereira Roders [1], **Job Roos** [2]

[1] *Eindhoven University of Technology, Department Built Environment*

[2] *Delft University of Technology, Faculty of Architecture and the Built Environment*

Abstract

3TU Saving Energy Battle (sEB) aimed at charting post-war neighbourhoods in energy saving rankings, and take a first step in a global monitoring tool on resource efficiency. We also tested the new process of energy performance certification, in three post-war neighbourhoods of major Dutch cities: Westelijke Tuinsteden, Amsterdam; Ommoord, Rotterdam; and Mariahoeve, Den Haag.

This monitoring tool and online short courses were developed online. Further, we organized an live event on 28 February 2015, where students and volunteers teamed up to assist building owners with the upload of requested information and photos. The sEB event was a great experience! Den Haag won first place (127), followed by Amsterdam (118) and Rotterdam (62)!

All building owners who succeeded in uploading all needed information have obtained a definitive Energy label issued by Atriensis, free of charge. The research team has their data, to answer their research questions. Public officers and owners can inform transformation decisions on their energy savings. Ministries can compare and determine the contribution of measures as the energy performance certification to boost energy efficiency.

Keywords

energy; saving; energy saving; energy label; post-war neighbourhood; monitoring; Westelijke Tuinsteden; Amsterdam; Ommoord; Rotterdam; Mariahoeve; Den Haag

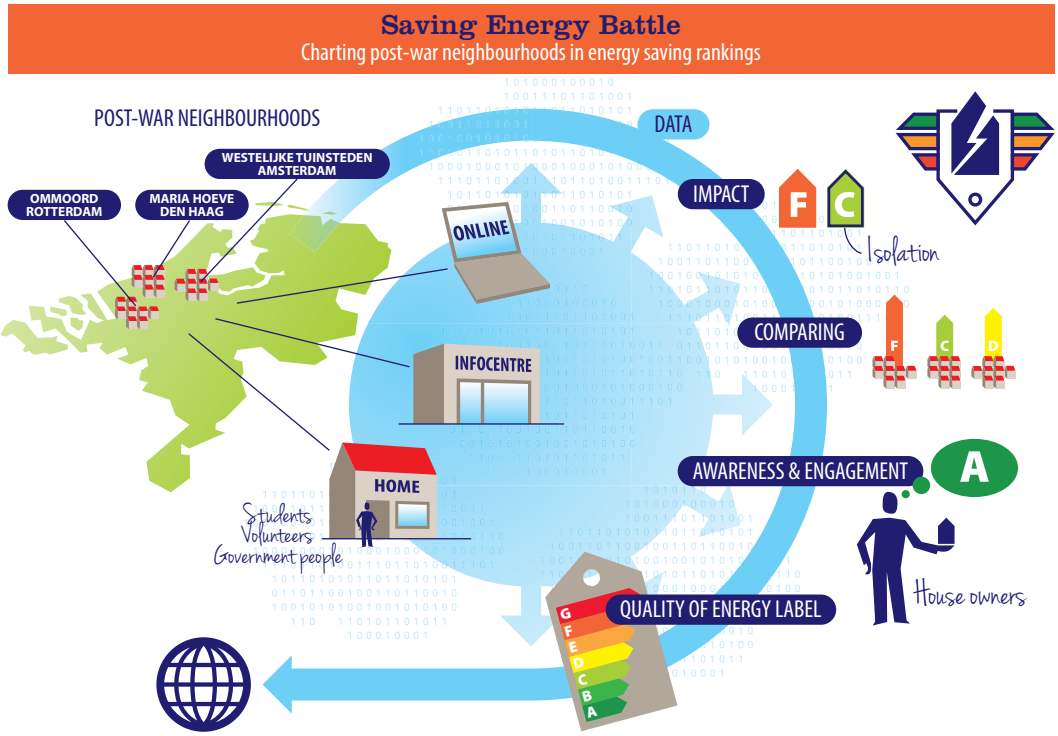

FIGURE 1 Graphical abstract

Background

Energy efficiency is a priority to many cities, with programs being implemented to stimulate energy savings in the built environment. Cities aim to reduce carbon footprint, but also to cut energy costs, one of the biggest expenses of building ownership. That has led to urban renewal developments, where neighbourhoods were demolished and replaced by new neighbourhoods, supposed to be more sustainable. Some neighbourhoods built during the post-war period are now under trial for their poor materialisation and energy inefficiency. Though, they are also the massive expression of a rising idealism from the 20s and 30s, where public officers and professionals, as urban planners, architects and engineers had the opportunity to give the working class a larger, healthier and greener environment. The demolition of these neighbourhoods may seem to solve the problem, but also raises many other as resources waste, social segregation and culture loss.

Concept

Instead, there is great potential for achieving energy savings in the building sector, through the transformation of existing buildings. Energy efficiency-wise, transformations can save not only energy costs, but also embodied energy. There is a growing body of knowledge on energy efficiency in the built environment, though, primarily derived from samples, models, and/or buildings owned by housing associations. The private housing sector is largely understudied, as information remains either confidential, complex or costly. Consequently, there is still very little known on the energy efficiency of post-war neighbourhoods, and even less on the contribution of private efforts to raise energy savings through the transformation of their buildings. Yet, their transformation patterns can feed the debate and help determine the energy (in)efficiency of buildings and post-war neighbourhoods in particular. A framework for energy performance certification, as the Energy label, provides information on the energy efficiency of buildings, but also enables energy savings to be determined and fore casted. It also systematically records information about the building stock and its transformation. There is great criticism on the reliability of the Energy label, particularly on the new process. Though, being an international framework, there is great potential to keep developing it into a reliable global monitoring tool, where buildings, neighbourhoods, cities and even countries could be compared on their energy efficiency, strategies to raise energy savings shared and the effectiveness globally validated.

Follow-up

This project targeted a duration of six months. There are seven main work packages, each offering relevant outcomes. We have created the on-line monitoring tool (http://savingenergybattle.nl/) to reach all building owners. Previous to the event, the website offered short courses, created to ease the submission process. Now, the website offers the outcomes of the SEB event.

The sEB event was a great experience! Den Haag won first place (127), followed by Amsterdam (118) and Rotterdam (62)! The students are now doing the data analysis, but they already got invitations to present their results by the Cultural Heritage Agency of the Netherlands (RCE) on 13 May 2015. The results will be shared and disseminated in a publication prepared by both universities. We can't wait to show you all results. Stay tuned!

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